W claim:

1. An endoscope system comprising:

a first waveguide;

a second waveguide;

an optical coupler which optically couples said waveguides to each other;

a low-coherent light source arranged on a proximal end of either one of said first and second waveguides, said low-coherent light source emitting low-coherent light to be incident on this waveguide;

a polygon mirror having a plurality of reflecting surfaces around its center axis, said reflecting surfaces differing from one another in tilt angle with respect to said center axis;

a supporting mechanism which supports said polygon mirror and rotates it about said center axis;

an incident optical member which guides low-coherent light emitted from a distal end of said first waveguide to a reflecting surface of said polygon mirror;

an emission optical member which converges the low-coherent light reflected by said polygon mirror;

a reflecting member which reflects the low-coherent light emitted from a distal end of said second waveguide so that the low-coherent light returns into said second waveguide as reference light;

optical path length adjusting mechanism which makes a relative change between length of an optical path extending from said optical coupler to an object through said first waveguide and that of another optical path extending from said optical coupler to said reflecting member through said second waveguide;

a photodetector arranged on a proximal end of the other of said first waveguide and said second waveguide, said photodetector receiving light from this waveguide; and

signal processor generating a tomographic image of the object on the basis of a detection signal output from said photodetector while said optical path length adjusting mechanism makes the relative change and while said support mechanism rotates said polygon mirror.

2. The endoscope system according to claim 1, wherein

said signal processor forms a tomographic image concerning both the surface of said object and the subsurface interior of the same.

3. The endoscope system according to claim 1, wherein

said optical path length adjusting mechanism moves said reflecting member so as to approach or recede from the distal end of said second waveguide to change the length of the optical path extending from said optical coupler to said reflecting member through said second waveguide with respect to the length of the optical path extending from said coupler to said object

through said first waveguide.

4. The endoscope system according to claim 1, wherein

said low-coherent light source includes a super-luminescent diode.

5. The endoscope system according to claim 1, further comprising:

an illumination optical system which irradiates said object with visible light or excitation light for exciting self-fluorescence of said object;

an objective optical system which converges light from the surface of said object to form an image of the surface of said object; and

a pick-up device which picks up the image of the surface of said object.

6. The endoscope system according to claim 5, further comprising:

a visible light source which emits visible light;

an excitation light source which emits excitation light; and

light source switching mechanism which selects either the visible light emitted from said visible light source or the excitation light emitted from said excitation light source to enter said illumination optical system, whereby

said objective optical system forms a visible-light image of said object when the visible light is introduced to said

illumination optical system by said light source switching means, and

said objective optical system forms a self-fluorescent image of said object when the excitation light is introduced to said illumination optical system by said light source switching means.

7. The endoscope system according to claim 5, further comprising

displaying means for displaying the image of the surface of said object, picked up by said pick-up device and the tomographic image of said object formed by said signal processor.

8. A polygon mirror comprising a plurality of reflecting surfaces around its center axis, said reflecting surfaces differing from each other in tilt angle with respect to said center axis, said polygon mirror rotating about said center axis.

9. The polygon mirror according to claim 8, wherein,

among said reflecting surfaces, each of those reflecting surfaces other than the reflecting surface having the smallest tilt angle has a tilt angle greater by a predetermined amount than that of the reflecting surface adjacent thereto in a predetermined direction of rotation about said center axis.

10. The polygon mirror according to claim 9, wherein

all of said reflecting surfaces have tilt angles of

identical polarity with respect to said center axis.

11. A scanning optical system comprising:

a polygon mirror having a plurality of reflecting surfaces around its center axis, said reflecting surfaces differing from each other in tilt angle with respect to said center axis;

a supporting mechanism which supports said polygon mirror and rotates it about said center axis; and

an incident optical system fixed which respect to said supporting mechanism, said incident optical system introducing light toward said reflecting surfaces of said polygon mirror.

12. The scanning optical system according to claim 11, further comprising

an emission optical member fixed with respect to said supporting mechanism, said emission optical member converging light reflected by said reflecting surfaces of said polygon mirror.

13. The scanning optical system according to claim 12, wherein said emission optical member is an fθ lens.